Physician Consortium for Performance Improvement

Clinical Performance Measures

Heart Failure

Tools Developed by Physicians for Physicians

Provided by:

American College of Cardiology
American Heart Association
Physician Consortium for Performance Improvement

Purpose

This measurement tool provides physicians with *evidence-based*[1] clinical performance measures, including a data collection flowsheet, that may be useful for quality improvement activities within physician practices. The ability to track changes over time is integral to the concept of continuous quality improvement in patient care. Evidence-based clinical performance measures have been identified as a means for tracking these changes.

These measures are provided for physicians by the **American College of Cardiology (ACC),** the **American Heart Association (AHA),** and the **Physician Consortium for Performance Improvement™ (Consortium)**. The ACC, a professional society of over 25,000 cardiovascular physicians and scientists committed to providing optimal cardiovascular care, and the AHA, a national voluntary health organization with over 30,000 scientist and physician volunteers dedicated to reducing disability and death from cardiovascular diseases and stroke, have joined with the Consortium to ensure that the cardiovascular community speaks with one voice on clinical performance measurement. The ACC and the AHA have a long-standing partnership in publishing clinical practice guidelines and are now developing physician-level performance measures for implementation in both the inpatient and outpatient setting.

The Consortium is a physician-led initiative that includes methodological experts, clinical experts representing more than 70 national medical specialty societies, state medical societies, the Agency for Healthcare Research and Quality, and the Centers for Medicare and Medicaid Services. The Consortium's vision is to fulfill the responsibility of physicians to patient care, public health, and safety by becoming the leading source organization for evidence-based clinical performance measures and outcomes reporting tools for physicians.

Performance measures must be designed based on their intended purpose.[2,3] The measures presented here are intended to facilitate individual physician quality improvement. Therefore, there are no minimum sample size requirements, and the suggested feedback is sufficiently detailed to pinpoint areas of concern for the physician. The measures defined in this measurement tool are not intended, and should not be used, for physician comparison.[4]

Performance measures are not clinical guidelines; rather, measures are derived from evidence-based clinical guidelines and indicate whether or not or how often a process or outcome of care occurs.[2] Performance measures provide important information to a physician, allowing him or her to enhance the quality of care delivered to patients.

Statistics on Heart Failure

A person aged 40 years or older has a 1 in 5 chance of developing heart failure (HF).[5] Currently, about 5 million Americans are living with HF, and about 550,000 new cases are diagnosed each year.[6] The high prevalence combined with multiple complications from this condition increase health care costs significantly.

- From 1979 to 2000, HF deaths increased 148%.[6]
- About 22% of male and 46% of female heart attack victims will be disabled with HF within 6 years.[6]
- In individuals diagnosed with HF, sudden cardiac death occurs at 6 to 9 times the rate in the general population.[6]
- In 2003, the annual direct and indirect costs of HF in the United States are expected to exceed $24 billion.[6]

Statistics on Current Practice

Despite potential risks and established clinical guidelines, recent data suggest that some patients are not being managed optimally for their disease. It has been reported that in some states:

- Only 70% of Medicare patients with HF received an evaluation of ejection fraction.[7]
- Only 68% of Medicare patients with left ventricular ejection fraction <0.40 were prescribed an angiotensin-converting enzyme (ACE) inhibitor.[7]
- Only 75% of all HF patients who are candidates for ACE inhibitors are prescribed them.[8]

Selected Evidence-Based Clinical Guidelines

Evidence-based clinical practice guidelines are available for the management of heart failure. This measurement set is based on clinical guidelines from:

- American College of Cardiology/American Heart Association[9]

The performance measures found in this document have been developed in agreement with these guidelines, enabling the physician to track his or her performance in individual patient care and across patient populations. *Please note that treatment must be based on individual patient needs and professional judgment.*

For more information and updates, including a list of practicing physicians and other experts who developed this measurement set, please visit the Consortium's Web site

www.physicianconsortium.org

Relevant Physican Specialties, Patient Population, and Settings of Care

These performance measures are designed for:

- Use by any physician who manages the ongoing care of patients with diagnosed HF, aged ≥18 years.

A note on terminology for this condition: Some HF patients have exercise intolerance but little evidence of fluid retention, whereas others complain primarily of edema and report few symptoms of dyspnea or fatigue. Because not all patients have volume overload at the time of initial or subsequent evaluation, the term "heart failure" is preferred over the older term "congestive heart failure."[9]

American College of Cardiology, American Heart Association, and Physician Consortium for Performance Improvement Heart Failure Physician Performance Measurement Set[a]

	Clinical Recommendations[9]	Clinical Performance Measures Per Reporting Year	
Left Ventricular Function (LVF) Assessment	In patients with HF, an assessment of left ventricular systolic function with 2-dimensional echocardiography or radionuclide ventriculography is recommended. (Class I Recommendation, Level-C Evidence) In patients with a change in clinical status or clinical event/treatment with significant effect on cardiac function, repeat measurement of ejection fraction is recommended. (Level-C Evidence)	Percentage of patients with quantitative or qualitative results of LVF assessment recorded **Numerator =** Patients with quantitative or qualitative results of LVF assessment recorded **Denominator =** All patients aged ≥18 years with HF	
		Per Patient: Quantitative or qualitative results of LVF assessment	*Per Patient Population:* Percentage of patients with quantitative or qualitative results of LVF assessment recorded
Weight Measurement *Denominator Exclusion:* Patient visits in which physician was unable to weigh patient	A thorough physical examination is recommended to identify cardiac and noncardiac disorders that may accelerate the progression of HF. This physical examination may include initial and ongoing assessments of the patient's volume status. (Class I Recommendation, Level-C Evidence)	Percentage of patient visits with weight measurement recorded **Numerator =** Patient visits with weight measurement recorded **Denominator =** All patient visits for patients aged ≥18 years with HF	
		Per Patient: Number of visits with weight measurement recorded/Number of visits	*Per Patient Population:* Percentage of patient visits with weight measurement recorded
Blood Pressure Measurement	A thorough physical examination is recommended to identify cardiac and noncardiac disorders that may accelerate the progression of HF. (Class I Recommendation, Level-C Evidence)	Percentage of patient visits with blood pressure measurement recorded **Numerator =** Patient visits with blood pressure measurement recorded **Denominator =** All patient visits for patients aged ≥18 years with HF	
		Per Patient: Number of visits with blood pressure measurement recorded/Number of visits Most recent systolic and diastolic blood pressure values[b]	*Per Patient Population:* Percentage of patient visits with a blood pressure measurement recorded Distribution of systolic and diastolic blood pressure values[b]
Assessment of Clinical *Symptoms* of Volume Overload (Excess)	A thorough history is recommended to identify cardiac and noncardiac disorders that may accelerate the progression of HF. This history may include initial and ongoing assessments of the patient's volume status. (Class I Recommendation, Level-C Evidence)	Percentage of patient visits with assessment of clinical ***symptoms*** of volume overload (excess) **Numerator =** Patient visits with assessment of clinical *symptoms* of volume overload (excess). Assessment for absence or presence of symptoms of volume overload must include: Dyspnea OR; Orthopnea OR; Documentation of standardized scale or completion of assessment tool[c] **Denominator =** All patient visits for patients aged ≥18 years with HF	
		Per Patient: Number of visits with assessment of clinical *symptoms* of volume overload (excess)/ Number of visits	*Per Patient Population:* Percentage of patient visits with assessment of clinical *symptoms* of volume overload (excess)

a Refers to patients aged ≥18 years with diagnosed HF.

b If BP measurement is repeated during the visit in the same arm and the same position, use the last BP reading. If the sequence of readings is unknown, use the lowest BP reading.

c Standardized scale or assessment tools may include the New York Heart Association Functional Classification of Congestive Heart Failure (level of activity only); Kansas City Cardiomyopathy Questionnaire; Minnesota Living with Heart Failure™ Questionnaire; or Chronic Heart Failure Questionnaire (Guyatt).

American College of Cardiology, American Heart Association, and Physician Consortium for Performance Improvement Heart Failure Physician Performance Measurement Set[a]

	Clinical Recommendations[g]	Clinical Performance Measures Per Reporting Year	
Assessment of Activity Level	A thorough history is recommended to identify cardiac and noncardiac disorders that may accelerate the progression of HF. This history may include initial and ongoing assessments of the patient's activity level. (Class I Recommendation, Level-C Evidence)	Percentage of patient visits with assessment of activity level **Numerator =** Patient visits with assessment of current level of activity OR documentation of standardized scale or completion of assessment tool[c] **Denominator =** All patient visits for patients aged ≥18 years with HF	
		Per Patient: Number of visits with assessment of activity level/Number of visits	*Per Patient Population:* Percentage of patient visits with assessment of activity level
Assessment of Clinical *Signs* of Volume Overload (Excess)	A thorough physical examination is recommended to identify cardiac and noncardiac disorders that may accelerate the progression of HF. This physical examination may include initial and ongoing assessments of the patient's volume status. (Class I Recommendation, Level-C Evidence)	Percentage of patient visits with assessment of clinical ***signs*** of volume overload (excess) **Numerator =** Patient visits with assessment of clinical *signs* of volume overload (excess). Assessment for presence or absence of sings of volume overload must include: Peripheral edema OR; Rales OR; Hepatomegaly OR; Ascites OR; Assessment of jugular venous pressure OR; S3 or S4 gallop **Denominator =** All patient visits for patients aged ≥18 years with HF	
		Per Patient: Number of visits with assessment of clinical *signs* of volume overload (excess)/Number of visits	*Per Patient Population:* Percentage of patient visits with assessment of clinical *signs* of volume overload (excess)
Patient Education *Denominator Inclusion:* Patients with one or more visit(s) during a six-month period.	Patient education and close supervision is recommended for patients with HF to reduce the likelihood of noncompliance and lead to the detection of changes in body weight or clinical status early enough for effective treatment to be instituted. Avoidance of patient behaviors that may increase the risk of HF (eg, smoking, alcohol, and illicit drug use) should also be encouraged. (Class I Recommendation, Level-C Evidence)	Percentage of patients who were provided with patient education on disease management and health behavior changes during one or more visit(s) **Numerator =** Patients provided with patient education at one or more visit(s). Patient education should include **one or more** of the following: Weight monitoring; Diet (sodium restriction); Symptom management; Physical activity; Smoking cessation; Medication instruction; Minimizing or avoiding use of NSAIDs; Referral for visiting nurse, or specific educational or management programs; Prognosis/end-of-life issues **Denominator =** All patients aged ≥18 years with HF and with one or more visit(s)	
		Per Patient: Whether or not patient education was provided	*Per Patient Population:* Percentage of patients who were provided with patient education on disease management and health behavior changes during one or more visit(s)
Beta-Blocker Therapy *Denominator Inclusion:* Patients with HF and left ventricular systolic dysfunction (LVSD) (left ventricular ejection fraction [LVEF] < 40% or moderately or severely depressed left ventricular systolic function) *Denominator Exclusion:* Documentation of medical reason(s) for not prescribing beta-blocker; documentation of patient reason(s)[d] for not prescribing beta-blocker	Patients with asymptomatic LVSD (Stage B): Beta-blocker therapy is recommended for all HF patients with recent myocardial infarction (MI) (Level-A Evidence) and patients with reduced ejection fraction (Level-B Evidence) Patients with symptomatic LVSD (Stage C): Beta-adrenergic blockade in all stable patients unless contraindicated (Class I Recommendation, Level-A Evidence)	Percentage of HF patients who also have LVSD who were prescribed beta-blocker therapy **Numerator =** Patients who were prescribed beta-blocker therapy **Denominator =** All HF patients aged ≥18 years with LVEF < 40% or with moderately or severely depressed left ventricular systolic function	
		Per Patient: Whether or not patient with LVSD was prescribed beta-blocker therapy	*Per Patient Population:* Percentage of all patients with LVSD who were prescribed beta-blocker therapy Percentage of patients with LVSD who were prescribed beta-blocker therapy, with all denominator exclusions applied

d Patient reasons for not prescribing beta-blocker, ACE inhibitor, or warfarin: economic, social, and/or religious, etc.

American College of Cardiology, American Heart Association, and Physician Consortium for Performance Improvement Heart Failure Physician Performance Measurement Set[a]

	Clinical Recommendations[g]	Clinical Performance Measures Per Reporting Year	
ACE Inhibitor or ARB Therapy *Denominator Inclusion:* Patients with HF and LVSD (LVEF < 40% or moderately or severely depressed left ventricular systolic function) *Denominator Exclusion:* Documentation of medical reason(s) for not prescribing ACE inhibitor therapy and for not prescribing ARB therapy; documentation of patient reason(s)[d] for not prescribing ACE inhibitor therapy and for not prescribing ARB therapy	Patients with asymptomatic LVSD (Stage B): ACE inhibitor therapy is recommended for HF patients with recent MI (Level-A Evidence) and in patients with reduced ejection fraction (Level-B Evidence). Patients with symptomatic LVSD (Stage C): ACE inhibitor therapy in all patients, unless contraindicated. (Class I Recommendation, Level-A Evidence)	Percentage of HF patients who also have LVSD who were prescribed ACE inhibitor or ARB therapy **Numerator =** Patients who were prescribed ACE inhibitor or ARB therapy **Denominator =** All HF patients aged ≥18 years with LVEF < 40% or with moderately or severely depressed left ventricular systolic function	
		Per Patient: Whether or not patient with LVSD was prescribed ACE inhibitor or ARB therapy	*Per Patient Population:* Percentage of all patients with LVSD who were prescribed ACE inhibitor or ARB therapy Percentage of patients with LVSD who were prescribed ACE inhibitor or ARB therapy, with all denominator exclusions applied
Warfarin Therapy for Patients with Atrial Fibrillation *Denominator Inclusion:* Patients with HF and paroxysmal or chronic atrial fibrillation *Denominator Exclusion:* Documentation of medical reason(s) for not prescribing warfarin; documentation of patient reason(s)[d] for not prescribing warfarin	Anticoagulant use is recommended for patients with HF and concomitant diseases (eg, paroxysmal or chronic atrial fibrillation or a previous thromboembolic event). (Class I Recommendation, Level-A Evidence)	Percentage of HF patients who also have paroxysmal or chronic atrial fibrillation who were prescribed warfarin therapy **Numerator =** Patients who were prescribed warfarin therapy **Denominator =** All HF patients aged ≥18 years with paroxysmal or chronic atrial fibrillation	
		Per Patient: Whether or not patient with paroxysmal or chronic atrial fibrillation was prescribed warfarin therapy	*Per Patient Population:* Percentage of all patients with paroxysmal or chronic atrial fibrillation who were prescribed warfarin therapy Percentage of patients with paroxysmal or chronic atrial fibrillation who were prescribed warfarin therapy, with all denominator exclusions applied
Laboratory Tests This measure is intended for use only in quality improvement activities with prospective data collection	Evaluation of patients with HF (Class I Recommendation) Initial measurement of the following: complete blood count, urinalysis, serum electrolytes (including calcium and magnesium), blood urea nitrogen, serum creatinine, blood glucose, liver function tests, thyroid-stimulating hormone[e] (Level-C Evidence)	Percentage of patients for whom initial laboratory testing was performed **Numerator =** Patients for whom initial laboratory testing was performed **Denominator =** All patients aged ≥18 years with HF	
		Per Patient: Whether or not initial laboratory testing was performed	*Per Patient Population:* Percentage of all patients for whom initial laboratory testing was performed

e For this measure, documentation required for only the following tests: complete blood count, serum electrolytes, blood urea nitrogen, serum creatinine, blood glucose, thyroid-stimulating hormone.

References

1 Sackett DL, Straus SE, Richardson WS, et al. *Evidence-based Medicine: How to Practice & Teach EBM. 2nd edition.* London, England:Churchill Livingstone;2000.

2 Performance Measurement Coordinating Council. Desirable Attributes of Performance Measures. A Consensus Document from the AMA, JCAHO, and NCQA.1999. Available at: http://www.ama-assn.org/ama/pub/category/2946.html. Accessed August 2002.

3 Solberg LI, Mosser G, McDonald S. The three faces of performance measurement: improvement, accountability, and research. *Jt Comm J Qual Improv.* 1997;23:135-147.

4 Hofer TP, Hayward RA, Greenfield S, Wagner EH, Kaplan SH, Manning WG. The unreliability of individual physician "report cards" for assessing the costs and quality of care of a chronic disease. *JAMA.* 1999;28:2098-2105.

5 Lloyd-Jones DM, Larson MG, Leip EP, et al. Lifetime risk for developing congestive heart failure: The Framingham Heart Study. *Circulation.* 2002;106:3068-3072.

6 American Heart Association. *Heart Disease and Stroke Statistics – 2003 Update.* Dallas, Tex.: American Heart Association; 2002.

7 Jencks SF, Huff ED, Cuerdon T. Change in the Quality of Care Delivered to Medicare Beneficiaries, 1998-1999 to 2000-2001. JAMA. 2003;289:305-312.

8 Gheorghiade M, Gattis WA, O'Connor CM. Treatment Gaps in the Pharmacologic Management of Heart Failure. *Reviews in Cardiovascular Medicine.* 2002; 3(suppl 3):S11-S19.

9 Hunt SA, Baker DW, Chin MH, et al. ACC/AHA Guidelines for the Evaluation and Management of Chronic Heart Failure in the Adult: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. 2001.

American College of Cardiology, American Heart Association, and Physician Consortium for Performance Improvement Heart Failure Physician Performance Measurement Set

Data Collection Flowsheet

Allergies
____
____

Provider No. _________ **Patient Name or Code** ______________________________ **Birth Date** ____ / ____ / ______ **Gender** M ❑ F ❑
(mm / dd / yyyy)

Clinical Assessment	**Initial Laboratory Tests Performed:** (select all that apply)				
	❑ CBC	❑ BUN	❑ Blood glucose	❑ Other	
	❑ Serum electrolytes	❑ Serum creatinine	❑ Thyroid stimulating hormone		
	❑ Left ventricular function assessed: ____/____/_____ **Results:**		❑ Left ventricular systolic dysfunction (left ventricular ejection fraction < 40% or moderately or severely depressed left ventricular systolic function)		
	Date of Visit (mm / dd / yyyy)	______/_______/______	______/_______/______	______/_______/______	______/_______/______
	Weight (lb/kg)	❑ Unable to weigh	❑ Unable to weigh	❑ Unable to weigh	❑ Unable to weigh
	Heart Rate				
	Blood Pressure	L R sitting supine standing	L R sitting supine standing	L R sitting supine standing	L R sitting supine standing
	Assessment of Clinical *Symptoms* of Volume Overload (Excess)	Dyspnea Y or N Fatigue Y or N Orthopnea Y or N	Dyspnea Y or N Fatigue Y or N Orthopnea Y or N	Dyspnea Y or N Fatigue Y or N Orthopnea Y or N	Dyspnea Y or N Fatigue Y or N Orthopnea Y or N
	Level of Activity	____________ ❑ Standardized scale or assessment tool used[a]	____________ ❑ Standardized scale or assessment tool used[a]	____________ ❑ Standardized scale or assessment tool used[a]	____________ ❑ Standardized scale or assessment tool used[a]
	Assessment of Clinical *Signs* of Volume Overload (Excess)	Peripheral edema Y or N Rales Y or N Hepatomegaly Y or N Ascites Y or N Assessment of jugular venous pressure Y or N S3 or S4 gallop Y or N Other: __________	Peripheral edema Y or N Rales Y or N Hepatomegaly Y or N Ascites Y or N Assessment of jugular venous pressure Y or N S3 or S4 gallop Y or N Other: __________	Peripheral edema Y or N Rales Y or N Hepatomegaly Y or N Ascites Y or N Assessment of jugular venous pressure Y or N S3 or S4 gallop Y or N Other: __________	Peripheral edema Y or N Rales Y or N Hepatomegaly Y or N Ascites Y or N Assessment of jugular venous pressure Y or N S3 or S4 gallop Y or N Other: __________
Education	**Patient Education**	❑ Patient education provided[b]	❑ Patient education provided[b]	❑ Patient education provided[b]	❑ Patient education provided[b]

a Standardized scale or assessment tools may include the New York Heart Association Functional Classification of Congestive Heart Failure (level of activity only), Kansas City Cardiomyopathy Questionnaire; Minnesota Living with Heart Failure Questionnaire; or Chronic Heart Failure Questionnaire (Guyatt).

b Patient education should include one or more of the following: weight monitoring; diet (sodium restriction); symptom management; physical activity; smoking cessation; medication instruction; minimizing or avoiding use of NSAIDs; referral for visiting nurse or specific educational or management programs; or prognosis/end-of-life issues.

American College of Cardiology, American Heart Association, and Physician Consortium for Performance Improvement Heart Failure Physician Performance Measurement Set

Data Collection Flowsheet

Provider No. _____ **Patient Name or Code** _____

Adverse Drug Reactions

_____

Medication Management	**Date of Visit** (mm / dd / yyyy)	_____/_____/_____	_____/_____/_____	_____/_____/_____	_____/_____/_____
	Beta-Blocker Therapy	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)
	ACE Inhibitor or ARB Therapy	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)
	Warfarin Therapy ❑ Chronic or paroxysmal atrial fibrillation	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)	❑ Prescribed ❑ Not prescribed (medical reasons*) ❑ Not prescribed (patient reasons*)
	*Specify medical (eg, allergy, contraindication) or patient (eg, economic, social, religious) reasons for not prescribing therapy:				
Other Medications					

AP21:05-0980:750:12/05